

## WHAT IS CLAIMED IS:

- 1        1.        A register file comprising:  
2                a plurality of register file cells coupled to a bit line;  
3                a latch coupled to the bit line; and  
4                an inverter coupled between an output of the latch and the bit line.
- 1        2.        The register file as recited in claim 1, further comprising:  
2                another inverter coupled between the bit line and an input of the latch.
- 1        3.        The register file as recited in claim 1, wherein the output of the latch is an  
2                output of the register file.
- 1        4.        The register file as recited in claim 1, wherein the inverter is a tri-state  
2                inverter receiving a hold select signal to control operation of the inverter.
- 1        5.        The register file as recited in claim 4, wherein an output of the inverter is  
2                coupled to the bit line and wherein an input of the inverter is coupled to the output of  
3                the latch.
- 1        6.        The register file as recited in claim 5, wherein data is read out of the register  
2                array to be input into the latch.
- 1        7.        The register file as recited in claim 1, wherein a multiplexor is not coupled  
2                between the bit line and the latch.

1        8.        A register file comprising:

2                a first plurality of cells coupled to a first local bit line;

3                a global bit line;

4                a first tri-state inverter coupled between the first local bit line and the global  
5 bit line, the first tri-state inverter controlled by a first local select signal;

6                a second plurality of cells coupled to a second local bit line;

7                a second tri-state inverter coupled between the second local bit line and the  
8 global bit line, the second tri-state inverter controlled by a second local select signal;

9                a latch with its input coupled to the global bit line; and

10               a third tri-state inverter coupled between an output of the latch and the global  
11 bit line, the third tri-state inverter controlled by a hold signal.

1        9.        The register file as recited in claim 8, further comprising:

2                an inverter coupled between the global bit line and the input of the latch.

1        10.       The register file as recited in claim 8, wherein when the third tri-state inverter  
2 is activated, the first and second local select signals are deactivated.

- 1        11.    A register file comprising:  
2            a plurality of register file cells coupled to a bit line;  
3            a latch coupled to the bit line; and  
4            a transmission gate circuit coupled between an output of the latch and the bit  
5        line.
- 1        12.    The register file as recited in claim 11, further comprising:  
2            an inverter coupled between the bit line and an input of the latch.
- 1        13.    The register file as recited in claim 11, wherein the output of the latch is an  
2        output of the register file.
- 1        14.    The register file as recited in claim 11, wherein the transmission gate circuit  
2        receives a hold select signal.
- 1        15.    The register file as recited in claim 14, wherein an output of the transmission  
2        gate circuit is coupled to the bit line and wherein an input of the transmission gate  
3        circuit is coupled to the output of the latch.
- 1        16.    The register file as recited in claim 15, wherein data is read out of the register  
2        array to be input into the latch.
- 1        17.    The register file as recited in claim 11, wherein a multiplexor is not coupled  
2        between the bit line and the latch.

1 18. A register file comprising:

2 a first plurality of cells coupled to a first local bit line;

3 a global bit line;

4 a first transmission gate coupled between the first local bit line and the global  
5 bit line, the first transmission gate controlled by a first local select signal;

6 a second plurality of cells coupled to a second local bit line;

7 a second transmission gate coupled between the second local bit line and the  
8 global bit line, the second transmission gate controlled by a second local select signal;

9 a latch with its input coupled to the global bit line; and

10 a third transmission gate coupled between an output of the latch and the global  
11 bit line, the third transmission gate controlled by a hold signal.

1 19. The register file as recited in claim 8, further comprising:

2 an inverter coupled between the global bit line and the input of the latch.

1 20. The register file as recited in claim 8, wherein when the third transmission  
2 gate is activated, the first and second local select signals are deactivated.